JOURNAL OF
POLYMER SCIENCE
PART • B
Polymer Physics

Volume Contents
Volume 37, 1999
Issue 1, January 1, 1999

ARTICLES

Thermal Behavior of Poly(hexamethylene terephthalate) Oligomers. I. Melting Behavior and Morphology of the Crystalline Phase
X. LEFÈBVRE, M. H. J. KOCH, H. REYNAERS, AND C. DAVID 1

Study of a Plasticized-Unoriented P(VF_2/VF_3) (73/27 mol%) Copolymer. I. The Effects of Crystallization Conditions on Morphology, Physical, and Thermal Properties
D. L. WINSOR, J. I. SCHEINBEIM, AND B. A. NEWMAN 19

Study of a Plasticized-Unoriented P(VF_2/VF_3) (73/27 mol%) Copolymer. II. The Effects of Poling on the Piezoelectric and Ferroelectric Properties of Slow-Cooled Films
D. L. WINSOR, D. L. SCHEINBEIM, AND B. A. NEWMAN 29

Structure–Dynamics Relationships of the α-Relaxation in Flexible Copolyesters during Crystallization as Revealed by Real-Time Methods
A. NOGALES, T. A. EZQUERRA, J. M. GARCÍA, AND F. J. BALTÁ-CALLEJA 37

Structural Heterogeneity and Dynamic Mechanical Relaxations of Ethylene α-Olefin Copolymers
R. G. MATTHEWS, I. M. WARD, AND G. CAPACCIO 51

Charge Transport Properties for Carbazolyl Groups Pendant Poly(glutamate)
M. YOSHIDA, S. MITSUI, T. KAWAI, N. KOBAYASHI, AND R. HIROHASHI 61

Morphology of PC/SAN Blends: Effect of Reactive Compatibilization, SAN Concentration, Processing, and Viscosity Ratio
G. WILDES, H. KESKKULA, AND D. R. PAUL 71

Morphology of Homogeneous Copolymers of Ethylene and 1-Octene. II. Structural Changes on Annealing
M. PEETERS, B. GODERIS, H. REYNAERS, AND V. MATHOT 83

Volume 37, 1999
Issue 2, January 15, 1999

ARTICLES

Recovery as a Measure of Oriented Crystalline Structure in Poly(ether ester)s Based on Poly(ethylene oxide) and Poly(ethylene terephthalate) Used as Shape Memory Polymers
M. WANG AND L. ZHANG 101

Multiple Light Scattering and Cavitation in Two Phase Tough Polymers
S. GÉHANT AND R. SCHIRRER 113

Investigating Time–Temperature Superpositioning in Crosslinked Polymers Using the Tube-Junction Model
P. P. SIMON AND H. J. PLOEHN 127

Surlyn®/[Silicon Oxide] Hybrid Materials. 2. Physical Properties Characterization
D. A. SIUZDAK AND K. A. MAURITZ 143

Mechanical Properties of Polymers Containing Fillers
Z. GAO AND A. H. TSOU 155

Physical Aging of Syndiotactic Polypropylene
L. GUADAGNO, C. FONTANELLA, V. VITTORIA, AND P. LONGO 173

Volume 37, 1999
Issue 3, February 1, 1999

ARTICLES

Coarsening of the Phase Structure in Immiscible Polymer Blends. Coalescence or Ostwald Ripening?
I. FORTELNÝ, A. ŽIVNÝ, AND J. JŮZA 181

Studies on Molecular Composite. I. Processing of Molecular Composites Using a Precursor Polymer for Poly(*p*-phenylene benzobisthiazole)
H. AKITA AND T. HATTORI 189

Studies on Molecular Composite. II. Processing of Molecular Composites Using Copolymers Consisting of a Precursor of Poly(*p*-phenylene benzobisthiazole) and Aromatic Polyamide

H. AKITA, H. KOBAYASHI, T. HATTORI, AND K. KAGAWA 199

Studies on Molecular Composite. III. Nano Composites Consisting of Poly(*p*-phenylene benzobisthiazole) and Thermoplastic Polyamide

H. AKITA AND H. KOBAYASHI 209

Free Volume-Size Dependence on Temperature and Average Molecular-Weight in Poly(ethylene oxide) Determined by Positron Annihilation Lifetime Spectroscopy

A. O. PORTO, G. GOULART SILVA, AND W. F. MAGALHÃES 219

Dipolar Motions and Phase Transitions in a Side-Chain Polysiloxane Liquid Crystal. A Study by Thermally Stimulated Depolarization Currents

N. T. CORREIA AND J. J. MOURA RAMOS 227

Thermal Characterization and Solid-State ^{13}C-NMR Investigation of Blends of Poly(*N*-Phenyl-2-Hydroxytrimethylene Amine) and Poly(*N*-vinyl Pyrrolidone)

Z. ZHONG AND Y. MI 237

Preparation and Ion Conductivities of the Plasticized Polymer Electrolytes Based on the Poly(acrylonitrile-*co*-lithium methacrylate)

K.-H. LEE, J.-K. PARK, AND W.-J. KIM 247

Intramolecular Excited State Complexes in Trichromophoric Model Compounds for Polyesters Derived from 2,6-Naphthalenedicarboxylic Acid and Aliphatic Glycols: Experiment, Rotational Isomeric State Model, and Molecular Dynamics

O. MARTÍN, F. MENDICUTI, E. SAIZ, AND W. L. MATTICE 253

Volume 37, 1999
Issue 4, February 15, 1999

ARTICLES

Probing the Interfacial Region of Microphase-Separated Block Copolymers by Differential Scanning Calorimetry

R. D. SPAANS, M. MUHAMMAD, AND M. C. WILLIAMS 267

Differential Size-Exclusion Chromatography for the Analysis of Gelatin–Polyelectrolyte Complexes

C. A. HARRISON AND J. S. TAN 275

Effects of Flexibility on Liquid Crystalline Polymer Behavior: The Nematic Broken Rod

C. V. CHAUBAL AND L. G. LEAL 281

Solid-State Complexes of Poly(L-Histidine) with Metal Chlorides from the First Row of the *d*-Block
M. P. MCCURDIE AND L. A. BELFIORE 301

In Situ Measurement of the Thermal Expansion Behavior of Benzocyclobutene Films
T. C. HODGE, S. A. BIDSTRUP ALLEN, AND P. A. KOHL 311

The Degree of Crystallinity of Monoclinic Isotactic Poly(propylene)
J. R. ISASI, L. MANDELKERN, M. J. GALANTE, AND R. G. ALAMO 323

Nonstoichiometric Polyelectrolyte Complexes: A Mathematical Model and Some Experimental Results
E. NORDMEIER AND P. BEYER 335

Hole Trapping in Molecularly Doped Polymers
P. M. BORSENBERGER, W. T. GRUENBAUM, E. H. MAGIN, S. A. VISSER, AND D. E. SCHILDKRAUT 349

Role of Tie Molecules in the Yielding Deformation of Isotactic Polypropylene
K.-H. NITTA AND M. TAKAYANAGI 357

Thermal and Dielectric Properties of Oriented Liquid Crystalline Polysiloxane Doped with Azo-Dye
E. WOLARZ, D. KILIAN, W. HAASE, AND D. BAUMAN 369

The Influence of the Molecular Mass of Two Incompatible Polymers on Their Miscibility in the Solid State without Compatibilizer after Casting from Solution
A. DONDOS, V. CHRISTOPOULOU, AND D. PAPANAGOPOULOS 379

Viscoelasticity of Low Molecular Weight Polystyrene. Separation of Rubbery and Glassy Components
T. INOUE, T. ONOGI, M.-L. YAO, AND K. OSAKI 389

Viscoelasticity and Birefringence of Syndiotactic Polystyrene. I. Dynamic Measurement in Supercooled State
T. INOUE, D.-S. RYU, K. OSAKI, AND T. TAKEBE 399

Volume 37, 1999
Issue 5, March 1, 1999

ARTICLES

Effect of Polymer Architecture on Self-Diffusion of LC Polymers
S. R. CLINGMAN, G. MAO, C. K. OBER, R. H. COLBY, M. BREHMER, R. ZENTEL, M. BIGNOZZI, M. LAUS, A. ANGELONI, AND J. R. GILLMOR 405

Transport of Benzene and Methyl-Substituted Benzenes through Carbon Black-Filled Epoxidized Natural Rubber
T. JOHNSON AND S. THOMAS 415

Heterogeneity of Segmental Dynamics around T_g and Nanoscale Compositional Inhomogeneity in Polyurethane/Methacrylate Interpenetrating Networks as Estimated by Creep Rate Spectroscopy
V. A. BERSHTEIN, P. N. YAKUSHEV, L. KARABANOVA, L. SERGEEVA, AND P. PISSIS 429

Nonisothermal Crystallization and Melting Behavior of Poly(β-hydroxybutyrate)–Poly(vinyl-acetate) Blends
Y. AN, L. LI, L. DONG, Z. MO, AND Z. FENG 443

Change of Morphological Properties in Drawing Water-Swollen Cellulose Films Prepared from Organic Solutions. A View of Molecular Orientation in the Drawing Process
E. TOGAWA AND T. KONDO 451

Photoluminescence of Two Thienylpyrrole Polymers
Z. HAN, M. THAKUR, R. M. METZGER, AND M. P. CAVA 461

A Study on Free Volume of Acrylonitrile-Styrene Copolymer and Methyl Methacrylate-Styrene Copolymer by Using Positron Annihilation
C. QI, S. ZHANG, Y. WU, Y. ZHONG, D. SONG, AND T. WANG 465

Transport Properties of Thermoplastic/Thermoset Blends
E. ESPUCHE, M. ESCOUBES, J. P. PASCAULT, AND M. TAHA 473

Volume 37, 1999
Issue 6, March 15, 1999

ARTICLES

Reversible Gelation of Poly(dimethylsiloxane) with Ionic and Hydrogen-Bonding Substituents
H.-A. KLOK, E. A. REBROV, A. M. MUZAFAROV, W. MICHELBERGER, AND M. MÖLLER 485

Determination of Thermal Degradation of Vulcanized Rubbers Using Diffracted SH Ultrasonic Waves
M. FUKUHARA, Y. KUWANO, A. TSUGANE, AND M. YOSHIDA 497

The Influence of Annealing on Thermal Transitions in a Nematic Copolyester
G. R. CANTRELL, C. C. MCDOWELL, B. D. FREEMAN, AND C. NOËL 505

Hardness and Young's Modulus of Transcrystalline Polypropylene by Vickers and Knoop Microindentation
E. AMITAY-SADOVSKY AND H. D. WAGNER 523

Polarized Infrared Spectra of Poled Aromatic Polyamide Films
J. UMEMURA, Y. MURATA, K. TSUNASHIMA, AND N. KOIZUMI 531

Polyolefin Analysis by Single-Step Crystallization Fractionation
L. J. D. BRITTO, J. B. P. SOARES, A. PENLIDIS, AND B. MONRABAL 539

High-Density Polyethylene Fractionation with Supercritical Propane
L. J. D. BRITTO, J. B. P. SOARES, A. PENLIDIS, AND V. KRUKONIS 553

Analysis of Crystallization Behavior and Crystal Modifications of Poly(butylene-2,6-naphthalene dicarboxylate)
T. CHIBA, S. ASAI, W. XU, AND M. SUMITA 561

Crystallization Behavior and Spherulite Morphology of Soft and Hard Segments in Ethylene Terephthalate-ε-Caprolactone Copolyesters
G. Y. ZHANG, X. L. LUO, C. F. LI, AND D. Z. MA 575

Low-Temperature Relaxation of Polymers around Doped Dyes Studied by Persistent Spectral Hole Burning
S. MACHIDA, S. TANAKA, K. HORIE, AND B. LI 585

Comparison of Methods for the Determination of Diffusion Coefficients of Polymers in Dilute Solutions: The Influence of Polydispersity
E. P. C. MES, W. TH. KOK, H. POPPE, AND R. TIJSSEN 593

Structural Anisotropy in Unstretched and Uniaxially Stretched Poly(*p*-phenylene vinylene)
H. V. SHAH, J. I. SCHEINBEIM, AND G. A. ARBUCKLE 605

Volume 37, 1999
Issue 7, April 1, 1999

SPECIAL SECTION

Historical Notes in Polymer Physics
COMPILED BY W. R. BURGHARDT 617

ARTICLES

An Investigation of the Thermal and Thermo-Oxidative Degradation of Polybenzoxazines with a Reactive Functional Group
H. Y. LOW AND H. ISHIDA 647

Chain Coherence Length of Rigid-Rod Poly(*p*-phenylene benzobisthiazole) and Derivatives
H. H. SONG 661

Formation and Elasticity of Layer Networks
X. WANG 667

Phase Behavior of Crystalline Blends of Poly(tetrafluoroethylene) and of Random Fluorinated Copolymers of Tetrafluoroethylene
R. PUCCIARIELLO AND C. ANGIOLETTI 679

Water Absorption in EVOH Films and Its Influence on Glass Transition Temperature
Z. ZHANG, I. J. BRITT, AND M. A. TUNG 691

Structure and Mechanical Properties for Binary Blends of Polypropylene and Ethylene-1-Hexene Copolymer
M. YAMAGUCHI, K.-I. SUZUKI, AND H. MIYATA 701

Thermal Behavior of Ferroelectric Polyamide 11 in Relation to Pyroelectric Properties
L. IBOS, C. MARAVAL, A. BERNÈS, G. TEYSSÈDRE, C. LACABANNE, S.-L. WU, AND J. I. SCHEINBEIM 715

Effects of Temperature on Cure Kinetics and Mechanical Properties of Vinyl–Ester Resins
S. ZIAEE AND G. R. PALMESE 725

Volume 37, 1999
Issue 8, April 15, 1999

RAPID COMMUNICATION

Nano-Deformation of Crystalline Domains during Tensile Stretching Studied by Atomic Force Microscopy
R. S. MCLEAN AND B. B. SAUER 859

ARTICLES

Thermal Diffusivity of Polycaprolactone/Poly(bisphenol A carbonate) Blends by Flash Radiometry
N. TSUTSUMI AND K. KANO 745

Effect of the Initiator Content and Temperature on the Curing of an Unsaturated Polyester Resin
X. RAMIS AND J. M. SALLA 751

Chitosan-Based Hydrogels: A New Polymer-Based System with Excellent Laser-Damage Threshold Properties
H. JIANG, W. SU, M. BRANT, M. E. DE ROSA, AND T. J. BUNNING 769

Crystalline Structure and Morphology of Microphases in Compatible Mixtures of Poly(tetrahydrofuran-methyl methacrylate) Diblock Copolymer and Polytetrahydrofuran
L.-Z. LIU AND B. CHU 779

Transport Properties of Thermally Responsive Anion Exchange Membranes Containing *N*-Isopropylacrylamide in Electrodialysis
T. SATA, S.-I. EMORI, AND K. MATSUSAKI 793

A 3-D Numerical Simulation of AC Electrical Properties of Short Fiber Composites
L. FLANDIN, M. VERDIER, B. BOUTHERIN, Y. BRECHET, AND J.-Y. CAVAILLÉ 805

Model Filled Rubber. II. Particle Composition Dependence of Suspension Rheology
J. J. CAI AND R. SALOVEY 815

Relaxation Dynamics of Salt-Free Polyelectrolyte Solutions Using Flow Birefringence and Rheometry
S.-P. CHEN AND L. A. ARCHER 825

Syntheses and Characterizations of Soft-Segment Ionic Polyurethanes
X. WANG, H. LI, X. TANG, AND F.-C. CHANG 837

Oxygen Barrier Properties of Crystallized and Talc-Filled Poly(ethylene terephthalate)
D. J. SEKELIK, E. V. STEPANOV, S. NAZARENKO, D. SCHIRALDI, A. HILTNER, AND E. BAER 847

Volume 37, 1999
Issue 9, May 1, 1999

ARTICLES

Blends of Isotactic Polypropylene and Natural Terpene Resins. I. Phase Structure, Thermal, and Dynamic-Mechanical Properties
S. CIMMINO, E. D'ALMA, M. L. DI LORENZO, E. DI PACE, AND C. SILVESTRE 867

Viscous Behavior of Linear and Three-Branch Alkanes: Linking the Equilibrium and Transport Theories
U. YAHSI 879

The Effect of Phase-Separated Morphology on the Rheological Properties of Polystyrene/Poly(vinyl methyl ether) Blend
J. K. KIM, H. W. SON, Y. LEE, AND J. KIM 889

Viscoelastic Characterization of Phenolic Resin–Carbon Fiber Composite Degradation Process
J.-D. NAM AND J. C. SEFERIS 907

Morphological Analysis of Photocured Polyurethane Acrylate Networks. Correlation with Viscoelastic Properties
PH. BARBEAU, J. F. GERARD, B. MAGNY, J. P. PASCAULT, AND G. VIGIER 919

The Influence of Partial Emulsification on Coalescence Suppression and Interfacial Tension Reduction in PP/PET Blends
J.-C. LEPERS, B. D. FAVIS, AND C. LACROIX 939

Thermoelectric Power and Conductivity of Different Types of Polypyrrole
N. T. KEMP, A. B. KAISER, C.-J. LIU, B. CHAPMAN, O. MERCIER, A. M. CARR, H. J. TRODAHL, R. G. BUCKLEY, A. C. PARTRIDGE, J. Y. LEE, C. Y. KIM, A. BARTL, L. DUNSCH, W. T. SMITH, AND J. S. SHAPIRO 953

NOTE

Analytical Function for Molecular Weight Development in Living Polymerization
S. ZHU AND W.-J. WANG 961

Volume 37, 1999
Issue 10, May 15, 1999

ARTICLES

Preparation and Structure/Property Relationships of Polyesters Containing Conjugated Diacetylene Groups
X. HU AND X. LI 965

The Equatorial Small-Angle Scattering during the Straining of Poly(ether ester) and Its Analysis
N. STRIBECK 975

Pressure-Temperature Study of Dielectric Relaxation of a Polyurethane Elastomer
Z.-Y. CHENG, S. GROSS, J. SU, AND Q. M. ZHANG 983

Mechanical Properties and Structure of the Zone-Drawn Poly(L-lactic acid) Fibers
H. OKUZAKI, I. KUBOTA, AND T. KUNUGI 991

On the Validity of Crystallization Kinetics Parameters Derived from the Depolarized Light Intensity (DLI) Technique: An Experimental Study of Polyvinylidene Fluoride
A. GHANEM 997

Periodic Organic–Organometallic Microdomain Structures in Poly(styrene-*block*-ferrocenyldimethylsilane) Copolymers and Blends with Corresponding Homopolymers
R. G. H. LAMMERTINK, M. A. HEMPENIUS, E. L. THOMAS, AND G. J. VANCSO 1009

Chain Dimensions and Entanglement Spacings in Dense Macromolecular Systems
L. J. FETTERS, D. J. LOHSE, AND W. W. GRAESSLEY 1023

Selective Transport of D,L-Tryptophan through Poly(L-glutamic acid) Membranes
K. TAKI, I. ARITA, M. SATOH, AND J. KOMIYAMA 1035

NOTE

Applicability of Distribution Functions for the Havriliak–Negami Spectral Function
R. ZORN 1043

Volume 37, 1999
Issue 11, June 1, 1999

ARTICLES

Compressive Stress Relaxation of Metallocene-Based Polyolefin Foams: Effect of Gamma-Ray-Induced Crosslinking
C. U. BHATT, J. R. ROYER, C. R. HWANG, AND S. A. KHAN 1045

Effect of the Sensitizer on the Properties of Fully Functionalized Photorefractive Epoxy Polymers and Their Performance in the Hologram Image Storage
C. J. CHANG, W. T. WHANG, K. Y. HSU, AND M. L. HSIEH 1057

Measurement of Thermal Diffusivity in Polymer Melts Using Forced Rayleigh Light Scattering
D. C. VENERUS, J. D. SCHIEBER, H. IDDIR, J. D. GUZMAN, AND A. W. BROERMAN 1069

Crosslinking of Chitosan Fibers with Dialdehydes: Proposal of a New Reaction Mechanism
J. Z. KNAUL, S. M. HUDSON, AND K. A. M. CREBER 1079

Pseudohexagonal Crystallinity and Thermal and Tensile Properties of Ethene–Propene Copolymers
G. GUERRA, O. R. DE BALLESTEROS, V. VENDITTO, M. GALIMBERTI, F. SARTORI, AND R. PUCCIARIELLO 1095

Morphology of Polyethylene–Carbon Black Composites
G. BEAUCAGE, S. RANE, D. W. SCHAEFER, G. LONG, AND D. FISCHER 1105

Rouse's Dynamics of Networks with Pendant Chains
D. A. VEGA, M. A. VILLAR, J. L. ALESSANDRINI, AND E. M. VALLÉS 1121

On the Viscoelastic and Plastic Behavior of Semiaromatic Polyamides
S. CHOE, B. BRULE, L. BISCONTI, J. L. HALARY, AND L. MONNERIE 1131

Structure and Dynamics of MG Rubber Studied by Dynamic Mechanical Analysis and Solid-State NMR
M. C. S. PERERA 1141

Molecular Dynamics and Mechanical Properties Correlations of PA6/PPO Blends Compatibilized with SMA
P. P. CHU, J.-M. HUANG, H.-D. WU, C.-R. CHIANG, AND F.-C. CHANG 1155

Water Sorption and Diffusion Studies in an Epoxy Resin System
C. MAGGANA AND P. PISSIS 1165

Polymerization and Viscoelastic Behavior of Networks from a Dual-Curing, Liquid Crystalline Monomer
J. W. SCHULTZ, J. BHATT, R. P. CHARTOFF, R. T. POGUE, AND J. S. ULLETT 1183

Elastic Modulus of the Crystalline Regions of Chitin and Chitosan
T. NISHINO, R. MATSUI, AND K. NAKAMAE 1191

Volume 37, 1999
Issue 12, June 15, 1999

ARTICLES

Morphology and Crystal Structure of the Poly(ethylene oxide)–Hydroquinone Molecular Complex
L. PATERNOSTRE, P. DAMMAN, AND M. DOSIÈRE 1197

Complexes of Polyelectrolyte Hydrogels with Organic Dyes: Effect of Charge Density on the Complex Stability and Intragel Dye Aggregation
C. H. JEON, E. E. MAKHAEVA, AND A. R. KHOKHLOV 1209

Effect of Low Contents of a Polyaniline Derivative on the Crystallization and Electrical Properties of Blends with PVDF
I. S. ROCHA, L. H. C. MATTOSO, L. F. MALMONGE, AND R. GREGÓRIO, JR. 1219

Physicochemical Characterization of Chemical Hydrogels Based on PVA
G. PARADOSSI, F. CAVALIERI, D. CAPITANI, AND V. CRESCENZI 1225

Polypyrrolones for Membrane Gas Separations. I. Structural Comparison of Gas Transport and Sorption Properties
C. M. ZIMMERMAN AND W. J. KOROS 1235

Polypyrrolones for Membrane Gas Separations. II. Activation Energies and Heats of Sorption
C. M. ZIMMERMAN AND W. J. KOROS 1251

Molecular Weight Distribution Formed during Free-Radical Polymerization in the Presence of Polyfunctional Chain Transfer Agents
H. TOBITA, T. MIMA, A. OKADA, J. MORI, AND T. TANABE 1267

Study of the Structure Development during the Melt Spinning of Nylon 6 Fiber by On-Line Wide-Angle Synchrotron X-ray Scattering Techniques
J. M. SAMON, J. M. SCHULTZ, J. WU, B. HSIAO, F. YEH, AND R. KOLB 1277

Degradation of Polymer Coating Systems Studied by Positron Annihilation Spectroscopy. II. Correlation with Free Radical Formation
H. CAO, Y. HE, R. ZHANG, J.-P. YUAN, T. C. SANDRECZKI, Y. C. JEAN, AND B. NIELSEN 1289

Solid-State Nuclear Magnetic Resonance Relaxation Times in Crosslinked Macroporous Polymer Particles of Divinylbenzene Homopolymers
D. E. AXELSON AND A. K. NYHUS 1307

Hydrodynamic Properties of A_8B_8 Type Miktoarm (Vergina) Stars
S. PISPAS, A. AVGEROPOULOS, N. HADJICHRISTIDIS, AND J. ROOVERS 1329

Analysis of the Relaxations on Polymers from the Real Part of a General Complex Susceptibility. Application to Dielectric Relaxations
J. A. PUÉRTOLAS, M. CASTRO, I. TELLERÍA, AND A. ALEGRÍA 1337

Volume 37, 1999
Issue 13, July 1, 1999

RAPID COMMUNICATIONS

Water-Soluble Polymer Blends with Partially Deacetylated Chitin: A Miscibility Characterization
Y. NISHIO, T. KOIDE, Y. MIYASHITA, N. KIMURA, AND H. SUZUKI 1533

Analysis of Transitions of Liquid Crystals and Conformationally Disordered Crystals by Temperature-Modulated Calorimetry
W. CHEN, A. TODA, I.-K. MOON, AND B. WUNDERLICH 1539

Two Types of Fractal Dimensions for Phase Separation in Multicomponent Polymer Membranes
T. MIYATA, T. TAKAGI, J.-I. HIGUCHI, AND T. URAGAMI 1545

ARTICLES

Properties of Polyvinylchloride in Solution: An Hydrodynamic and Vibrational Spectroscopy Study
V.-A. GLEZAKOU, M. SOUTZIDOU, C. LOUKOUTOS, I. XEXAKIS, AND K. G. VIRAS 1351

Melting Behavior of Poly(butylene succinate) during Heating Scan by DSC
E. S. YOO AND S. S. IM 1357

Fluorescence Probes for Investigation of Epoxy Systems and Monitoring of Crosslinking Processes
B. STREHMEL, V. STREHMEL, AND M. YOUNES 1367

Migration Phenomena of Surfactants in Polyethylene Film
K. LEE, K. CHO, I. PARK, B. H. LEE, D. RANA, AND S. CHOE 1387

Role of Aliphatic Alcohols on the Stability of Rat-Tail Tendon (RTT) Collagen Fiber
R. USHA AND T. RAMASAMI 1397

Temperature-Induced Phase Transition of Poly(*N*-*n*-propylacrylamide-*co*-butyl methacrylate-*co*-*N*,*N*-diethylaminoethyl methacrylate)
S. Y. PARK, J. H. YANG, S. H. YUK, AND M. S. JHON 1407

On the Relationship between Microhardness and Glass Transition Temperature of Some Amorphous Polymers
S. FAKIROV, F. J. BALTÁ CALLEJA, AND M. KRUMOVA 1413

Dependence of Silica Particle Sizes on Network Chain Lengths, Silica Contents, and Catalyst Concentrations in *In Situ*-Reinforced Polysiloxane Elastomers
J. M. BREINER, J. E. MARK, AND G. BEAUCAGE 1421

Details of Surface Features in Aromatic Polyamide Reverse Osmosis Membranes Characterized by Scanning Electron and Atomic Force Microscopy
S.-Y. KWAK, S. G. JUNG, Y. S. YOON, AND D. W. IHM 1429

Polybenzoxazine Resins: Aspects of Interaction and Adsorption Behavior
R. XU, H. P. SCHREIBER, M. HUANG, AND H. ISHIDA 1441

Kinetics of Thermally Induced Phase Separation in Ternary Polymer Solutions. I. Modeling of Phase Separation Dynamics
B. F. BARTON AND A. J. MCHUGH 1449

Kinetics of Thermally Induced Phase Separation in Ternary Polymer Solutions. II. Comparison of Theory and Experiment
P. D. GRAHAM, B. F. BARTON, AND A. J. MCHUGH 1461

Crew-Cut Aggregates from Self-Assembly of Blends of Polystyrene-*b*-Poly(acrylic acid) Block Copolymers and Homopolystyrene in Solution
L. ZHANG AND A. EISENBERG 1469

Glass Transition and Miscibility in Blends of Two Semicrystalline Polymers: Poly(aryl ether ketone) and Poly(ether ether ketone)
E. M. WOO AND Y. C. TSENG 1485

Selection Criteria for Solvent and Coagulation Medium in View of Macrovoid Formation in the Wet Phase Inversion Process
R.-C. RUAAN, T. CHANG, AND D.-M. WANG 1495

Surface Studies of Ultra-High Molecular Weight Polyethylene Irradiated with High-Energy Pulsed Electron Beams in Air
O. N. TRETINNIKOV, S.-I. FUJITA, S. OGATA, AND Y. IKADA 1503

Characterization of Stress-Strain Behavior for Binary Blends of Isotactic Polypropylene with Ethylene-α-Olefin Copolymer
M. YAMAGUCHI, K.-H. NITTA, A. TANAKA, AND M. KITAMURA 1513

Dissociation Behavior of Poly(α-hydroxy acrylic acid)
T. TAMURA, H. UEHARA, K. OGAWARA, S. KAWAUCHI, M. SATOH, AND J. KOMIYAMA 1523

Volume 37, 1999
Issue 14, July 15, 1999

RAPID COMMUNICATION

Rubber Particle Cavitation on Toughness Enhancement of SMI-Modified Poly(acrylonitrile-butadiene-styrene)
P.-Y. B. JAR, R. LEE, T. SHINMURA, AND K. KONISHI 1739

ARTICLES

Kinetic Study of Chitosan-Tripolyphosphate Complex Reaction and Acid-Resistive Properties of the Chitosan-Tripolyphosphate Gel Beads Prepared by in-Liquid Curing Method
F.-L. MI, S.-S. SHYU, S.-T. LEE, AND T.-B. WONG 1551

Analysis of Necking in High-Speed Spinning
J. S. RAGHAVAN AND J. A. CUCULO 1565

Halo Formation in Asymmetric Polyetherimide and Polybenzimidazole Blend Hollow Fiber Membranes
T.-S. CHUNG, Z.-L. XU, AND C.-H. A. HUAN 1575

Poly(methyl acrylate)/Poly(hydroxyethyl acrylate) Sequential Interpenetrating Polymer Networks. Miscibility and Water Sorption Behavior
J. L. G. RIBELLES, M. M. PRADAS, G. G. FERRER, N. P. TORRES, V. P. GIMÉNEZ, P. PISSIS, AND A. KYRITSIS 1587

Supramolecular Hexagonal Structure of a Segmented Liquid Crystalline Polyester with Allyl Group as Lateral Substituent
D. ACIERNO, L. DI MAIO, AND P. IANNELLI 1601

Phase Behavior and Some Calorimetric and Physical Properties of Diurethanes from Perfluoropolyether Macromonomers
C. TONELLI, M. BASSI, AND G. AJROLDI 1609

Effects of Molecular Weight of Nitrocellulose on Structure and Properties of Polyurethane/Nitrocellulose IPNs
L. ZHANG AND Q. ZHOU 1623

Phase Structures and Transition Behaviors in Polymers Containing Rigid Rodlike Backbones with Flexible Side Chains. V. Methylene Side-Chain Effects on Structure and Molecular Motion in a Series of Polyimides
K. W. MCCREIGHT, J. J. GE, M. GUO, I. MANN, F. LI, Z. SHEN, X. JIN, F. W. HARRIS, AND S. Z. D. CHENG 1633

Compatabilization of Polystyrene/Polypropylene Blends by Styrene–Butadiene Block Copolymers with Differing Polystyrene Block Lengths
D. HLAVATÁ, Z. HORÁK, J. HROMÁDKOVÁ, F. LEDNICKÝ, AND A. PLESKA 1647

Cis-Trans Isomerization and ^{13}C-NMR Chemical Shift of Polyphenylacetylene
F. ISHII, S. MATSUNAMI, M. SHIBATA, AND T. KAKUCHI 1657

Modeling of Multilayer Drying of Polymer Films
S. ALSOY AND J. L. DUDA 1665

Fracture Behavior–Morphology Relationships in an Unsaturated Polyester Resin Modified with a Liquid Oligomer
K. DE LA CABA, P. GUERRERO, J. GAVALDÁ, AND I. MONDRAGON 1677

Novel Poly(etheraroylhydrazides). An Example of "Conformationally Disordered Crystalline" Polymers
G. AVITABILE, G. GENTILE, P. LAURIENZO, M. MALINCONICO, E. MARTUSCELLI, F. RIVA, AND M. G. VOLPE 1687

Microstructure and Mechanical Properties of Hot-Air Drawn Poly(ethylene terephthalate) Fibers
A. SUZUKI, Y. NAKAMURA, AND T. KUNUGI 1703

Use of SAXS and Linear Correlation Functions for the Determination of the Crystallinity and Morphology of Semi-Crystalline Polymers. Application to Linear Polyethylene
B. GODERIS, H. REYNAERS, M. H. J. KOCH, AND V. B. F. MATHOT 1715

NOTE

The Local Free Volume in Blends of Acrylonitrile-Butadiene-Styrene Copolymer and Polyamide 6. A Positron Lifetime Study
G. DLUBEK, M. A. ALAM, M. STOLP, AND H.-J. RADUSCH 1749

Volume 37, 1999
Issue 15, August 1, 1999

ARTICLES

Nonequilibrium Structure of *cis*-Azo Compounds in Polymethyl Methacrylate after Photochemical Conversion from the *trans* Form
S. Y. GREBENKIN AND B. V. BOL'SHAKOV 1753

Steric Effect and Mobility of the Alkyl Chain in Regio-Irregular Poly-3-Alkylthiophenes
C.-G. WU, Y.-C. LIN, M.-J. CHAN, AND L.-N. CHIEN 1763

Transport Properties of Anion Exchange Membranes Prepared by the Reaction of Crosslinked Membranes Having Chloromethyl Groups with 4-Vinylpyridine and Trimethylamine
T. SATA AND S. NOJIMA 1773

X-Ray Absorption, Particle Orientation, and Rheological Behavior of Talc–Calcite Mixed-Particle Compounds in a Polystyrene Matrix
K. J. KIM AND J. L. WHITE 1787

Rheological Properties of Poly(lactides). Effect of Molecular Weight and Temperature on the Viscoelasticity of Poly(*l*-lactic acid)
J. J. COOPER-WHITE AND M. E. MACKAY 1803

Transport Properties of Crosslinked Acrylonitrile Butadiene Rubber/Poly(ethylene-co-vinyl acetate) Blends
H. VARGHESE, S. S. BHAGAWAN, AND S. THOMAS 1815

Long-Range Order in Physical Networks of Gel-Forming Triblock Copolymer Solutions
R. KLEPPINGER, N. MISCHENKO, H. L. REYNAERS, AND M. H. J. KOCH 1833

Equilibrium Phase Diagram of Polystyrene and 8CB
F. BENMOUNA, A. DAOUDI, F. ROUSSEL, J.-M. BUISINE, X. COQUERET, AND U. MASCHKE 1841

Phosphonyl/Hydroxyl Hydrogen Bonding–Induced Miscibility of Poly(arylene ether phosphine oxide/sulfone) Statistical Copolymers with Poly(hydroxy ether) (Phenoxy Resin): Synthesis and Characterization
S. WANG, Q. JI, C. N. TCHATCHOUA, A. R. SHULTZ, AND J. E. MCGRATH 1849

Modification of a Thermoplastic Elastomer Gel through the Addition of an Endblock-Selective Homopolymer
N. R. JACKSON, E. A. WILDER, S. A. WHITE, R. BUKOVNIK, AND R. J. SPONTAK 1863

Photophysical Properties of σ–π-Conjugated Alternating Oligothienylene–Oligosilylene Polymers
H. TANG, L. ZHU, Y. HARIMA, K. YAMASHITA, J. OHSHITA, AND A. KUNAI 1873

In Situ Drawing of High Molecular Weight Poly(ethylene terephthalate) in Subcritical and Supercritical CO_2
T. HOBBS AND A. J. LESSER 1881

Epitaxial and Graphoepitaxial Growth of Isotactic Polypropylene (iPP) from the Melt on Highly Oriented High Density Polyethylene (HDPE) Substrates
S. YAN, F. KATZENBERG, AND J. PETERMANN 1893

Reduced Percolation Thresholds of Immiscible Conductive Blends
S. H. FOULGER 1899

Calorimetric and Dielectric Effects during Polymerization of an Elastomer-Containing Mixture and Liquid-Liquid Phase Separation
C. FERRARI, E. TOMBARI, G. SALVETTI, AND G. P. JOHARI 1911

Melt Drawing of Ultra-High Molecular Weight Polyethylene: Comparison of Ziegler- and Metallocene-Catalyzed Reactor Powders
M. NAKAE, H. UEHARA, T. KANAMOTO, T. OHAMA, AND R. S. PORTER 1921

Physical Aging of an Amorphous Polyimide: Enthalpy Relaxation and Mechanical Property Changes
C. G. ROBERTSON, J. E. MONAT, AND G. L. WILKES 1931

NOTES

On the Relation between the Mark–Houwink–Sakurada Constants
R. SIMHA 1947

Development of a Simple Experimental Method to Measure Interphase Composition Profiles Generated by Diffusion in Polymers. Comparison between Bending and Torsion Techniques
E. PARDO, J. P. TOMBA, AND J. M. CARELLA 1949

Volume 37, 1999
Issue 16, August 15, 1999

ARTICLES

NMR Spectroscopy and Free Volume Analysis of the Effects of Copolymer Composition on the Swelling Kinetics and Chain Dynamics of Highly Crosslinked Copolymers of Acrylic Acid with PEG-Containing Multiacrylates
R. A. SCOTT, B. A. COWANS, AND N. A. PEPPAS 1953

Separation Studies of Hydrazine from Aqueous Solutions by Pervaporation
R. RAVINDRA, S. SRIDHAR, AND A. A. KHAN 1969

Microkinetics of Crystallization and Melting Behavior of Solid-State Polymerized Poly(ethylene terephthalate) (PET)
F. J. MEDELLÍN-RODRIGUEZ, R. LOPEZ-GUILLEN, AND M. A. WALDO-MENDOZA 1981

Effect of the Liquid–Liquid Phase Separation on the Crystallization Behavior and Mechanical Properties of Poly(ethylene-*ran*-vinyl acetate) and Paraffin Wax Blend
J. K. KIM AND B.-K. KIM 1991

Solid-State ^{13}C NMR Study on Thermal Dehydration Process of Poly(methacrylic acid) (PMAA)
A. ASANO, M. EGUCHI, AND T. KUROTU 2007

Simulations of Elongation of Supercoiled and Biopolymer Networks
P. CIFRA AND T. BLEHA 2013

Molecular Relaxations in Ester-Terminated, Amide-Based Dendrimers
S. K. EMRAN, G. R. NEWKOME, C. D. WEIS, AND J. P. HARMON 2025

Low-Rate Dynamic Contact Angles on Poly(methyl methacrylate/ethyl methacrylate, 30/70) and the Determination of Solid Surface Tensions
D. Y. KWOK, A. LI, AND A. W. NEUMANN 2039

Crystallization of Tethered Polyethylene in Confined Geometries
P. A. WEIMANN, D. A. HAJDUK, C. CHU, K. A. CHAFFIN, J. C. BRODIL, AND F. S. BATES 2053

Influence of Hyperbranched Polymers on the Interfacial Tension of Polypropylene/ Polyamide-6 Blends
G. JANNERFELDT, L. BOOGH, AND J.-A. E. MÅNSON 2069

PVDF Membrane Formation by Diffusion-Induced Phase Separation-Morphology Prediction Based on Phase Behavior and Mass Transfer Modeling
L.-P. CHENG, D.-J. LIN, C.-H. SHIH, A.-H. DWAN, AND C. C. GRYTE 2079

Heat Capacity of Solid-State Biopolymers by Thermal Analysis
M. L. DI LORENZO, G. ZHANG, M. PYDA, B. V. LEBEDEV, AND B. WUNDERLICH 2093

Molecular Model of Phenolic Polymer Dissolution in Photolithography
L. W. FLANAGIN, V. K. SINGH, AND C. G. WILLSON 2103

Pulsed-Laser–Deposited and Plasma-Polymerized Polytetrafluoroethylene (PTFE)-Like Thin Films: A Comparative Study on PTFE-Specific Properties
R. SCHWÖDIAUER, J. HEITZ, E. ARENHOLZ, S. BAUER-GOGONEA, S. BAUER, AND W. WIRGES 2115

Luminescence Studies of Polymer Matrices. III. Characterization and Evaluation of Acrylic Acid-Based Polymers as Hosts for a Phosphorescent Coding System
J. R. EBDON, I. SOUTAR, P. BROWN, A. R. LANE, A. J. MCCABE, AND L. SWANSON 2127

Structure and Property Relationships in Model Diglycidyl Ether of Bisphenol-A and Diglycidyl Ether of Tetramethyl Bisphenol-A Epoxy Systems. I. Mechanical Property Characterizations
H.-J. SUE, P. M. PUCKETT, J. L. BERTRAM, L. L. WALKER, AND E. I. GARCIA-MEITIN 2137

Plasticized PVC Reinforced with Cellulose Whiskers. I. Linear Viscoelastic Behavior Analyzed through the Quasi-Point Defect Theory
L. CHAZEAU, M. PAILLET, AND J. Y. CAVAILLÉ 2151

Nanostructures of Polyelectrolyte Gel–Surfactant Complexes
S. ZHOU, F. YEH, C. BURGER, AND B. CHU 2165

Correlation between Real Inhomogeneous Widths of Zero-Phonon Absorption Components and Intermolecular Interactions for Dye-Doped Polymers
M. OBATA, S. MACHIDA, AND K. HORIE 2173

Gas Transport Properties of Soluble Poly(amide imide)s
I. KRESSE, A. USENKO, J. SPRINGER, AND V. PRIVALKO 2183

Small-Angle X-Ray Scattering from Poly(methylmethacrylate) in Aqueous Solutions of *t*-Butyl Alcohol
S. SHIMIZU, Y. AIKI, H. IKAKE, AND K. KURITA 2195

Mechanical Properties of Molecular Composites. I. Poly (p-phenylene terephthalamide) Anion Molecules Dispersed in Poly(4-vinylpyridine)
L. TSOU, J. A. SAUER, AND M. HARA 2201

Dynamics of Poly(*p*-phenylene) Ladder Polymers in Solution
G. PETEKIDIS, G. FYTAS, U. SCHERF, K. MÜLLEN, AND G. FLEISCHER 2211

Molecular Surfaces: An Advantageous Starting Point for the Description of Composition-Dependent Viscosities Applied to Polymer Solutions
M. SCHNELL AND B. A. WOLF 2221

Non-Equilibrium Phase Behavior of Diblock Copolymer Melts and Binary Blends in the Intermediate Segregation Regime
P. M. LIPIC, F. S. BATES, AND M. W. MATSEN 2229

Experimental Evidence and Theoretical Analysis of Physical Aging in Thin and Thick Amorphous Glassy Polymer Films
K. D. DORKENOO AND P. H. PFROMM 2239

Dynamic Light Scattering Studies of Atactic and Syndiotactic Poly(methyl Methacrylate)s in Dilute Theta Solution
E. E. GÜREL, N. KAYAMAN, B. M. BAYSAL, AND F. E. KARASZ 2253

Studying Anomalous Diffusion in a Liquid Crystal/Polymer System Using Fast FTIR Imaging
C. M. SNIVELY AND J. L. KOENIG 2261

Crystallization Kinetics and Multiple Melting Phenomena of a Flame-Retardant Phosphorus Containing Copolyester
C. S. WANG AND C. H. LIN 2269

Refinement of Etching Techniques to Reveal Lamellar Profiles in Polyethylene Banded Spherulites
M. M. SHAHIN, R. H. OLLEY, AND M. J. BLISSETT 2279

Effect of Sodium Poly(styrene sulfonate) on Thermoreversible Gelation of Gelatin
J. R. GILLMOR, R. W. CONNELLY, R. H. COLBY, AND J. S. TAN 2287

Volume 37, 1999
Issue 17, September 1, 1999

RAPID COMMUNICATION

γ-Transcrystallization in Isotactic Polypropylene-Based Composites Promoted by Aramid Fibers
E. ASSOULINE, R. FULCHIRON, J.-F. GERARD, E. WACHTEL, H. D. WAGNER, AND G. MAROM 2534

ARTICLES

XPS Investigation of Water-Soluble Copolymer Surfactants on Interface
J. XU, L. SHI, AND M. YE 2297

Conformational Analysis of the Crystal Structure for MDI/BDO Hard Segments of Polyurethane Elastomers
C. W. PATTERSON, D. HANSON, A. REDONDO, S. L. SCOTT, AND N. HENSON 2303

Sorption and Diffusion of Low Molecular Weight Gases and Vapors in Glassy Polymers at High Concentration of Sorbate
M. A. KRYKIN, O. M. ZINOVIEVA, AND A. B. ZINOVIEV 2314

Hypercrosslinked Polystyrene: A Polymer in a Non-Classical Physical State
A. V. PASTUKHOV, M. P. TSYURUPA, AND V. A. DAVANKOV 2324

Molecular Simulation of Thermophysical Properties of Aromatic Polymers Containing Oxetane Ring in the Main Chain
D. PAVEL, J. BALL, S. BHATTACHARYA, R. SHANKS, AND N. HURDUC 2334

Fast FTIR Imaging: A New Tool for the Study of Semicrystalline Polymer Morphology
C. M. SNIVELY AND J. L. KOENIG 2353

Investigation of the Boron Nitride/Polybenzoxazine Interphase
M. T. HUANG AND H. ISHIDA 2360

Creep Behavior of Amorphous Ethylene-Styrene Interpolymers in the Glass Transition Region
H. Y. CHEN, E. V. STEPANOV, S. P. CHUM, A. HILTNER, AND E. BAER 2373

On the Crystal Structure of Odd-Even Nylons: Polymorphism of Nylon 5,10
P. VILLASEÑOR, L. FRANCO, J. A. SUBIRANA, AND J. PUIGGALÍ 2383

Study of the Self-Diffusion of Poly(ethylene glycol)s in Poly(vinyl alcohol) Aqueous Systems
L. MASARO, X. X. ZHU, AND P. M. MACDONALD 2396

Temperature Influence on the Stability and Chemical Composition of Electron Beam-Irradiated Polytetrafluoroethylene
K. SCHIERHOLZ, U. LAPPAN, A. PETR, L. DUNSCH, AND K. LUNKWITZ 2404

Characterization of Blends of Poly(vinyl chloride) and Poly(*N*-vinyl pyrrolidone) by FTIR and ^{13}C CP/MAS NMR Spectroscopy
S. ZHENG, Q. GUO, AND Y. MI 2412

Stepwise Annealing of Poly(butylene terephthalate)
M. YASUNIWA, T. MURAKAMI, AND M. USHIO 2420

Structure-Property Relationship in PCL/Starch Blend Compatibilized with Starch-*g*-PCL Copolymer
E.-J. CHOI, C.-H. KIM, J.-K. PARK 2430

Crystallization and Equilibrium Melting Behavior of PBT/PETG Blends
D. N. SAHEB AND J. P. JOG 2439

Influence of Composition on Properties of Nylon 6/EVOH Blends
L. INCARNATO, D. ACIERNO, P. RUSSO, M. MALINCONICO, AND P. LAURIENZO 2445

Structural Studies on Polymer Whiskers by Transmission Electron Microscopy. II. Unit Cell of Poly(*p*-hydroxybenzoic acid) Whisker Crystal at Room Temperature
M. TOSAKA, M. YAMAKAWA, M. TSUJI, S. MURAKAMI, AND S. KOHJIYA 2456

Gas Sorption and Characterization of Poly(ether-*b*-amide) Segmented Block Copolymers
V. I. BONDAR, B. D. FREEMAN, AND I. PINNAU 2463

A Study on Free-Volume Properties of Styrene-Acrylic Ester Type Copolymers
C. QI, S. ZHANG, Y. WU, H. LI, G. WANG, G. HUAI, T. WANG, AND J. MA 2476

Influence of Oxycycloaliphatic Groups in the Relaxation Behavior of Acrylic Polymers
R. PÉREZ-FEITO, R. DÍAZ-CALLEJA, J. GUZMÁN, AND E. RIANDE 2486

Improvement of Thermoplasticity for s-BPDA/PDA by Copolymerization and Blend with Novel Asymmetric BPDA-Based Polyimides
M. HASEGAWA, N. SENSUI, Y. SHINDO, AND R. YOKOTA 2499

Glass Transition Temperatures of Butyl Acrylate-Methyl Methacrylate Copolymers
M. FERNÁNDEZ-GARCÍA, R. CUERVO-RODRIGUEZ, E. L. MADRUGA 2512

Structural Data on the Packing of Poly(ester amide)s Derived from Glycine, Hexanediol, and Odd-Numbered Dicarboxylic Acids
N. PAREDES, M. T. CASAS, J. PUIGGALI, AND B. LOTZ 2521

NOTES

Local Free Volumes in Boron-Bombarded Kapton Polyimide: A Positron Lifetime Study
G. DLUBEK, R. BUCHHOLD, CH. HÜBNER, A. NAKLADAL, AND K. SAHRE 2539

XRD Data and Isomorphous Behavior of Several Bridged Poly(*p*-phenylene)s Including New Poly(biphenylene)s
T. YAMAMOTO, S.-B. KIM, AND B. K. CHOI 2544

Volume 37, 1999
Issue 18, September 15, 1999

ARTICLES

Enhanced Electrical Properties of Highly Oriented Poly(vinylidene fluoride) Films Prepared by Solid-State Coextrusion
M. NAGAI, K. NAKAMURA, H. UEHARA, T. KANAMOTO, Y. TAKAHASHI, AND T. FURUKAWA 2549

Assessment of Errors in the Determination of Mark–Houwink–Sakurada and Stockmayer–Fixman Constants Using Size-Exclusion Chromatography with On-Line Viscometric Detection: Analyses of Poly(p-Substituted Styrenes) in Tetrahydrofuran
M. L. COOTE AND T. P. DAVIS 2557

Model of Processing-Induced Microstructure Formation in Polymeric Materials
L. J. MENDES, T.-C. TSAI, K. A. HIGH, M. S. HIGH, AND D. A. TREE 2571

Domain Structure and Interphase Dimensions in Poly(urethaneurea) Elastomers Using DSC and SAXS
S. G. MUSSELMAN, T. M. SANTOSUSSO, J. D. BARNES, AND L. H. SPERLING 2586

Evaluation of Short Term–High Intensity Thermal Degradation of Graphite Fiber Reinforced Laminates via Ultrasonic Spectroscopy
G. T. SCHUENEMAN, A. J. LESSER, T. R. HOBBS, AND B. M. NOVAK 2601

Polymer Swelling. XXV. Structure-Affinity Correlation Studies That Involve Poly(styrene-*co*-divinylbenzene) Exposed to Acetylenic Liquids
L. A. ERREDE AND G. V. D. TIERS 2611

Free-Volume Change in Volume Phase Transition of Polyacrylamide Gel as Studied by Positron Annihilation: Salt Dependence
K. ITO, Y. UJIHIRA, T. YAMASHITA, AND K. HORIE 2634

IR Spectra Studies of Core-Shell Type Waterborne Polyacrylate-Polyurethane Microemulsions
A. DONG, T. WAN, S. FENG, AND D. SUN 2642

On the Phenomena of Deformation and Neck Formation in LLDPE Films Subjected to Uniaxial and Biaxial Loading Conditions
A. B. SABBAGH AND A. J. LESSER 2651

The Role of Interfacial Modifier in Toughening of Nylon-6 with a Core-Shell Toughener
Z.-Z. YU, M. LEI, Y.-C. OU, AND G.-H. HU 2664

Morphology of Polyurethanes with Triol Monomer Crosslinked on Hard Segments
T. L. YU, T. L. LIN, Y. M. TSAI, AND W. J. LIU 2673

Ring-Banded Spherulite Surface Structure of Poly(ε-caprolactone) in Its Miscible Mixtures with Poly(styrene-*co*-acrylonitrile)
Z. WANG, L. AN, W. JIANG, B. JIANG, AND X. WANG 2682

Modeling Stable Free-Radical Polymerization
S. ZHU 2692

NOTE

Interfacial Bonding of Silica Glass Fiber to Polystyrene Ionomers
D. M. ELLEY-BRISTOW, M. A. BELLINGER, J. A. SAUER, AND M. HARA 2705

Volume 37, 1999
Issue 19, October 1, 1999

ARTICLES

Design of the Ultimate Behavior of Tetrafunctional Epoxies Modified with Polysulfone by Controlling Microstructure Development
P. A. OYANGUREN, B. AIZPURUA, M. J. GALANTE, C. C. RICCARDI, O. D. CORTÁZAR, AND L. MONDRAGON 2711

Crystallization Kinetics of Crosslinkable Polymer Complexes of Novolac Resin and Poly(ethylene oxide)
Z. ZHONG AND Q. GUO 2726

Ferroelectricity and Piezoelectricity of Nylon 11 Films with Different Draw Ratios
S. L. WU, J. I. SCHEINBEIM, AND B. A. NEWMAN 2737

A Polymer–Solvent System with Two Homogeneous Double Critical Points: Polystyrene (PS)/(*n*-heptane + methylcyclohexane)
A. R. IMRE, G. MELNICHENKO, AND W. A. VAN HOOK 2747

Positron Annihilation Lifetime Studies of Changes in Free Volume on Cross-Linking Cis-Polyisoprene, High-Vinyl Polybutadiene, and their Miscible Blends
R. SRITHAWATPONG, Z. L. PENG, B. G. OLSON, A. M. JAMIESON, R. SIMHA, J. D. MCGERVEY, T. R. MAIER, A. F. HALASA, AND H. ISHIDA 2754

Rheology of Molten Polystyrene with Dissolved Supercritical and Near-Critical Gases
C. KWAG, C. W. MANKE, AND E. GULARI 2771

Polymer Solubility in Mixed Solvents
Y. TERMONIA 2782

Interrelation Between Phase State and Gas Permeation in Polysulfone/Polyimide Blend Membranes
G. C. KAPANTAIDAKIS, S. P. KALDIS, G. P. SAKELLAROPOULOS, E. CHIRA, B. LOPPINET, AND G. FLOUDAS 2788

A Simple Model to Explain the Complex Kinetic Behavior of Epoxy/Anhydride Systems
C. C. RICCARDI, J. DUPUY, AND R. J. J. WILLIAMS 2799

Miscibility of Polyimide with Polymeric Primer and Its Influence on Adhesion of Polyimide to the Primed Copper Metal: Effect of Precursor Origin
J. YU, M. REE, T. J. SHIN, X. WANG, W. CAI, D. ZHOU, AND K.-W. LEE 2806

NOTE

Effect of Network Structure of Epoxy DGEBA-Poly(oxypropylene)diamines on Tensile Behavior
L. SHAN, K. N. E. VERGHESE, C. G. ROBERTSON, AND K. L. REIFSNIDER 2815

Volume 37, 1999
Number 20, October 15, 1999

ARTICLES

Effects of Cooling Rate on Crystallinity of i-Polypropylene and Polyethylene Terephthalate Crystallized in Nonisothermal Conditions
A. WASIAK, P. P. SAJKIEWICZ, AND A. WOŹNIAK 2821

A Study on Properties and Morphological Structure of Ferrocene-Filled PVC
S. GUO AND Y. NING 2828

Pressure–Volume–Temperature Properties of Polyolefin Liquids and Their Melt Miscibility
S. J. HAN, D. J. LOHSE, P. D. CONDO, AND L. H. SPERLING 2835

Conduction Behavior of Doped Polyaniline Films at High Current Density Regime
H.-S. XU, Z.-Y. CHENG, Q. M. ZHANG, P.-C. WANG, AND A. G. MACDIARMID 2845

Gas Permeability, Diffusivity, and Solubility of Poly(4-Vinylpyridine) Film
J.-J. SHIEH AND T. S. CHUNG 2851

Roughness Correlation and Interdiffusion in Thin Films of Polymer Chains
J. KRAUS, P. MÜLLER-BUSCHBAUM, D. G. BUCKNALL, AND M. STAMM 2862

Open Spaces and Molecular Motions of Acrylic Epoxy-Based Network Polymers Probed by Positron Annihilation
A. UEDONO, W. AIKO, T. YAMAMOTO, T. NAKAMICHI, AND S. TANIGAWA 2875

Isothermal Crystallization of Concentrated Amorphous Starch Systems Measured by Modulated Differential Scanning Calorimetry
P. DE MEUTER, J. AMELRIJCKX, H. RAHIER, AND B. VAN MELE 2881

Water Sorption and Diffusion Coefficients of Protons and Water in PVDF-*g*-PSSA Polymer Electrolyte Membranes
S. HIETALA, S. L. MAUNU, F. SUNDHOLM, T. LEHTINEN, AND G. SUNDHOLM 2893

Excited-State Dynamics of Conjugated Polycarbosilane Oligomers with Branched Dimethyl or Diphenyl Group
I.-W. HWANG, N. W. SONG, D. KIM, Y. T. PARK, AND Y.-R. KIM 2901

Volume 37, 1999
Issue 21, November 1, 1999

ARTICLES

The Conformation of Poly(3-dodecyl thiophene) Within Methacrylic Polymer Matrix
P. V. SHIBAEV, M. S. ARZHAKOV, K. SCHAUMBURG, R. VINOKUR, T. BJORNHOLM, D. GREVE, A. KOMOLOV, AND K. NORGAARD 2909

Crystallization and Melting Behavior of the Soft and Hard Segments in Poly(ester-ether)s. I. Ethylene Oxide-Ethylene Terephthalate Segmented Copolymers
D. Z. MA, M. Z. WANG, M. C. ZHAO, X. Y. ZHANG, AND X. L. LUO 2918

Crystallization and Melting Behavior of the Soft and Hard Segments in Poly(ester-ether)s. II. Ethylene Oxide-Butylene Terephthalate Segmented Copolymers
M. Z. WANG, D. S. LI, X. L. LUO, AND D. Z. MA 2928

Relationships Between Chemical Structures and Solubility, Diffusivity, and Permselectivity of 1,3-Butadiene and *n*-Butane in 6FDA-Based Polyimides
A. SHIMAZU, T. MIYAZAKI, T. MATSUSHITA, M. MAEDA, AND K. IKEDA 2941

Control of Phase Separation Behavior of PC/PMMA Blends and Their Application to the Gas Separation Membranes
M. H. KIM, J. H. KIM, C. K. KIM, Y. S. KANG, H. C. PARK, AND J. O. WON 2950

Compatibilizing Effect of Transesterification Product Between Components in Bisphenol-A Polycarbonate/Poly(ethylene terephthalate) Blend
D. Z. MA, G. ZHANG, Y. HE, J. MA, AND X. LUO 2960

Interval Kinetic Gravimetric Sorption of Acetone in Random Copolymers of Poly(ethylene terephthalate) and Poly(ethylene 2,6-naphthalate)
C. C. MCDOWELL, B. D. FREEMAN, AND G. W. MCNEELY 2973

Adsorption of Stereoregular Poly(methyl methacrylates) on γ-Alumina: Spectroscopic Analysis
Y. GROHENS, M. AUGER, R. E. PRUD'HOMME, AND J. SCHULTZ 2985

Dielectric Behavior of P(VDF-TrFE)/PMMA Blends
L. O. FARIA AND R. L. MOREIRA 2996

Functionalized Polynorbornene Dielectric Polymers: Adhesion and Mechanical Properties
N. R. GROVE, P. A. KOHL, S. A. BIDSTRUP ALLEN, S. JAYARAMAN, AND R. SHICK 3003

Hydrocarbon and Fluorocarbon Solubility and Dilation in Poly(dimethylsiloxane): Comparison of Experimental Data with Predictions of the Sanchez–Lacombe Equation of State
M. G. DE ANGELIS, T. C. MERKEL, V. I. BONDAR, B. D. FREEMAN, F. DOGHIERI, AND G. C. SARTI 3011

Relaxation Behavior of Methacrylic Polymers with Bulky Hydrophilic Groups in Their Structures
V. COMPAÑ, J. GUZMÁN, R. DÍAZ-CALLEJA, AND E. RIANDE 3027

Effect on TSDC Relaxation Spectra of Substitutions in the Mesogenic Unit and in the Flexible Spacer of Poly(tetramethylene terephtaloyl-bis-4-oxybenzoate)
M. C. HERNÁNDEZ, E. LAREDO, A. BELLO, M. A. GÓMEZ, AND C. MARCO 3038

A WAXD/SAXS/DSC Study on the Melting Behavior of Ziegler–Natta and Metallocene Catalyzed Isotactic Polypropylene
E. B. BOND, J. E. SPRUIELL, AND J. S. LIN 3050

Piezoelectric and Dielectric Properties of Siloxane Elastomers Filled with Bariumtitanate
D. KHASTGIR AND K. ADACHI 3065

Mechanical Relaxation Spectroscopy of Three Triepoxide-Based Polymers
D. A. WASYLYSHYN AND G. P. JOHARI 3071

Effects of Monomer Structures on the Evolution of Liquid–Crystal Texture and Crystallization During Thin-Film Polymerization
S.-X. CHENG, T.-S. CHUNG, AND S. MULLICK 3084

Calculation and Experimental Verification of Concentration Profiles for Selected Species at the Interphase Generated by Diffusion in Polymer Pairs
J. PABLO TOMBA AND J. M. CARELLA 3097

Investigation of Dipole Alignments by Swelling in Poled Thin Films of a Side-Group Polymer Using Second Harmonic Generation
S.-H. LEE, C.-K. KIM, O.-P. KWON, M.-W. LEE, AND Y.-H. WON 3108

Effect of Miscible Polymer Diluents on the Development of Lamellar Morphology in Poly(oxymethylene) Blends
F. YEH, B. S. HSIAO, B. CHU, B. B. SAUER, AND E. A. FLEXMAN 3115

High-Frequency Dielectric and Conductometric Properties of Poly-l-lysine Aqueous Solutions at the Crossover Between Semidilute and Entangled Regime
F. BORDI, C. CAMETTI, AND A. MOTTA 3123

Crystal Thickness Distributions from Melting Homopolymers or Random Copolymers
B. CRIST AND F. M. MIRABELLA 3131

Small-Angle X-Ray Scattering Studies of Zinc Stearate-Filled Sulfonated Poly(ethylene-co-propylene-co-ethylidene norbornene) Ionomers
D. A. JACKSON, J. T. KOBERSTEIN, AND R. A. WEISS 3141

Microhardness Studies of Chain-Extended PE: I. Correlations to Microstructure
A. FLORES, F. J. BALTÁ CALLEJA, AND D. C. BASSETT 3151

Volume 37, 1999
Issue 22, November 15, 1999

ARTICLES

Effects of Polymer Molecular Weight and Temperature on Case II Transport
M. M. HASSAN AND C. J. DURNING 3159

Synthesis, Structure, and Morphology of Polymer–Silica Hybrid Nanocomposites Based on Hydroxyethyl Methacrylate
P. HAJJI, L. DAVID, J. F. GERARD, J. P. PASCAULT, AND G. VIGIER 3172

Experimentally Determined Temperature–Concentration Phase Diagrams of Monodisperse Alkanes with Chains Containing Between 100 and 200 Carbons
J. K. HOBBS, M. J. HILL, A. KELLER, AND P. J. BARHAM 3188

Formation and Structure of Pachyman Aggregates in Dimethyl Sulfoxide Containing Water
Q. DING, L. ZHANG, AND C. WU 3201

Onset Conditions for Bicontinuity of Domain Structure in Polymeric Fluids
V. N. KALASHNIKOV 3208

Ferroelectric Properties of Nylon 11 and Poly(vinylidene fluoride) Blends
Q. GAO, J. I. SCHEINBEIM, AND B. A. NEWMAN 3217

Clustering in Carboxylated Polysulfone Ionomers: A Characterization by Dynamic Mechanical and Small-Angle X-ray Scattering Methods
D. NGUYEN, J.-S. KIM, M. D. GUIVER, AND A. EISENBERG 3226

Domain and Segmental Deformation Behavior of Thermoplastic Elastomers Using Synchrotron SAXS and FTIR Methods
H. S. LEE, S. R. YOO, AND S. W. SEO 3233

The Use of Etching Techniques to Investigate the Morphology of Mechanically Induced Transformations in an Aliphatic Polyketone
N. A. JONES AND A. J. LESSER 3246

Volume 37, 1999
Issue 23, December 1, 1999

ARTICLES

Dynamic Mechanical and Thermal Characterization of High-Performance Polybenzoxazines
S. B. SHEN AND H. ISHIDA 3257

Phonons and Their Dispersion in Poly(*S*-benzyl-L-cysteine)
D. KAPOOR, N. K. MISRA, P. TANDON, AND V. D. GUPTA 3269

Laser Light-Scattering Studies of Poly(caprolactone-*b*-ethylene oxide-*b*-caprolactone) Nanoparticles and Their Enzymatic Biodegradation
Y. ZHAO, T. HU, Z. LV, S. WANG, AND C. WU 3288

Elastic Modulus of the Crystalline Regions of Polyimide Derived from Poly(amic acid)–Biphtalic Dianhydride and *p*-Phenylene Diamine
T. NISHINO, N. MIKI, Y. MITSUOKA, K. NAKAMAE, T. SAITO, AND T. KIKUCHI 3294

Effects of Glass-Transition Temperature on Properties of Photorefractive Polymer Composite
S. WU, F. ZENG, F. LI, Y. ZHU, AND H. ZHAO 3302

Physical Gelation of Melamine Formaldehyde Resin Solutions. II. A Combined Light-Scattering and Low-Resolution Relaxation Proton NMR Study
S. JAHROMI, V. LITVINOV, AND E. GELADÉ 3307

Fixed Crosslink Formation and Viscoelasticity of Polystyrene Networks
F. ISHII, W. HIRAHATA, K. YOKOTA, K. TUDA, A. HIRAO, AND T. KAKUCHI 3319

Diffusion of Water–Acetic Acid Mixtures in Epoxy
Y. DUTHEILLET, M. MANTLE, D. VESELY, AND L. GLADDEN 3328

Electron Microscopy Studies on the Coil-to-Globule Transition of a Polyelectrolyte in a Water–Acetone Mixture
V. O. ASEYEV, J. JUHANOJA, H. TENHU, AND S. I. KLENIN 3337

Correlation Between Fractional Free Volume and Diffusivity of Gas Molecules in Glassy Polymers
A. THRAN, G. KROLL, AND F. FAUPEL 3344

Elastic Modulus and Thermal Conductivity of Ultradrawn Polyethylene
C. L. CHOY, Y. W. WONG, G. W. YANG, AND T. KANAMOTO 3359

Morphology Development of Immiscible Polymer Blends During Melt Blending: Effects of Interfacial Agents on the Liquid-Solid Interfacial Heat Transfer
H. LI, G.-H. HU, AND J. A. SOUSA 3368

Volume 37, 1999
Issue 24, December 15, 1999

SPECIAL ISSUE: Contributions from the March 1999 Meeting of the American Physical Society—Division of High Polymer Physics, Atlanta, GA

ARTICLES

Macromolecular Architecture Effects on Block Copolymer Dynamics. II. A_2B Simple Grafts
K. CHRISSOPOULOU, S. HARVILLE, S. H. ANASTASIADIS, G. FYTAS, J. W. MAYS, AND N. HADJICHRISTIDIS 3385

Morphological Behavior of A_2B_2 Star Block Copolymers
F. L. BEYER, S. P. GIDO, D. UHRIG, J. W. MAYS, N. B. TAN, AND S. F. TREVINO 3392

Modeling the Principal Amorphous Halo in Quiescent Melts of Polyethylene and Ethylene Copolymers Using Wide-Angle X-ray Scattering and Its Implications
K. MONAR AND A. HABENSCHUSS 3401

X-ray Scattering Studies of Orientation in Channel Flows of a Thermotropic Liquid–Crystalline Polymer
D. K. CINADER, JR. AND W. R. BURGHARDT 3411

Semidilute Solution Rheology of Polyelectrolytes with No Added Salt
W. E. KRAUSE, J. S. TAN, AND R. H. COLBY 3429

Microstructure of Poly(vinyl alcohol) Hydrogels Produced by Freeze/Thaw Cycling
P. J. WILLCOX, D. W. HOWIE, JR., K. SCHMIDT-ROHR, D. A. HOAGLAND, S. P. GIDO, S. PUDJIJANTO, L. W. KLEINER, AND S. VENKATRAMAN 3438

Adhesive Failure Analysis of Pressure-Sensitive Adhesives
A. J. CROSBY AND K. R. SHULL 3455

Investigation of Fundamental Molecular Parameters of Polyaniline Films
R. OU AND R. SAMUELS 3473

Elastomeric Nanofibers of Styrene–Butadiene–Styrene Triblock Copolymer
H. FONG AND D. H. RENEKER 3488

Combined Dielectric Spectroscopy and Thermally Stimulated Currents Studies of the Secondary Relaxation Process in Amorphous Poly(ethylene terephthalate)
J. MENEGOTTO, P. DEMONT, A. BERNES, AND C. LACABANNE 3494

Conductivity and High-Temperature Relaxation of Tyrosine-Derived Polyarylates Measured with Thermal Stimulated Currents
M. PUMA, N. SUÁREZ, AND J. KOHN 3504

Strain Effects on Physical Gelation of Crystallizing Isotactic Polypropylene
N. V. POGODINA, H. H. WINTER, AND S. SRINIVAS 3512

Phase I and II Crystals of Poly(*p*-oxybenzoate). I. Effects of Substrate and Melt Polymerization Conditions
F. RYBNIKAR, P. SAHA, B.-L. YUAN, AND P. H. GEIL 3520

Phase I and II Crystals of Poly(*p*-oxybenzoate). II. Effects of Solution Polymerization Conditions on Morphology and Crystal Structure
B.-L. YUAN, F. RYBNIKAR, P. SAHA, AND P. H. GEIL 3532

Combined Author Index to Volume 37 3555

Combined Subject Index to Volume 37 3603

Volume Contents I